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ABSTRACT

A study analyzed the choreography of turn-taking and cohesion in classroom computer-mediated communication (CMC) to assess its efficacy as a linguistic intervention. Of the kinds of discussions made possible by CMC, it is the pseudonymous, synchronous conversation that most attracts those who would aspire to the project of changing linguistic behavior in the classroom. Such a discussion (part of a literature course taught by an adjunct lecturer at a mid-Eastern state university) was chosen as it involved an entire class for a sustained period; it offered a balance of male and female participants from a range of ethnic and social backgrounds; it involved the professor as an anonymous participant; and it was one of many such conversations in the course. Results indicated that pseudonymous, synchronous classroom CMC displays evidence of distinct operations for speaker-selection and turn-taking; of distinct operations for nomination, selection, and pursuit of topics; and of cohesion developed through the use of specific linguistic ties. Furthermore, students carry the bulk of the workload in these discursive operations. A question, however, to be raised in any discussion of linguistic intervention concerns not merely the efficacy of the intervention itself, but the social changes it is thought to facilitate. This particular attempt at linguistic intervention, like most others, is occurring within a context of social change, and as such is neither prerequisite to nor sufficient for social change. (Contains 71 references, 15 notes, 2 tables, and 5 figures of data.) (RS)

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**Computer-Mediated Classroom Discourse as Linguistic Intervention:
A Pragmatic Analysis of Topic, Coherence, and Choreography**

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Abstract

Language is inherently variable within and across contexts and always subject to change without societal or linguistic intervention. Yet attempts at linguistic intervention persist from those who hope that such linguistic changes will produce concomitant social changes. Educators have long been involved in attempts to engineer the language of the classrooms. In particular, oral classroom discussion has been one site of attempts to articulate existing biases and to posit alternatives. The perceived inequities of classroom discussion have led to what might be characterized as a quest for a "linguistic utopia" of the networked classroom—the use of computer-mediated conversation (CMC) as a more egalitarian mode of student interaction. Claims extolling the networked classroom are many. Of the kinds of discussions made possible by CMC, it is the pseudonymous, synchronous conversation that most attracts those who would aspire to the project of changing linguistic behavior in the classroom. The results of this study of pseudonymous, synchronous classroom CMC suggest that it displays evidence of distinct operations for speaker-selection and turn-taking; of distinct operations for nomination, selection, and pursuit of topics; and of cohesion developed through the use of specific linguistic ties. Furthermore, students carry the bulk of the workload in these discursive operations. A question, however, to be raised in any discussion of linguistic intervention concerns not merely the efficacy of the intervention itself, but of the social changes it is thought to facilitate. This particular attempt at linguistic intervention, like most others, is occurring within a context of social change, and as such is neither prerequisite to nor sufficient for social change.

Computer-Mediated Classroom Discourse as Linguistic Intervention:**A Pragmatic Analysis of Cohesion and Choreography**

Linguistic engineering has been thought by many to be a misguided effort, a reminder only that most language change occurs historically, naturally, and without deliberate intervention. It may be true that language is inherently variable within and across contexts and always subject to change without societal or linguistic intervention. And to describe the specific role in which language behavior is thought to create, maintain, and/or reflect inequities is a task fraught with complexity. Yet attempts at linguistic intervention persist—in Congress, in industry, in curricula, and in classrooms—and for good reason. Those who endeavor to accomplish such assume that linguistic behavior can indeed be changed. Many who assume that language can be changed are hopeful that such changes will produce concomitant social changes: as an example, witness the use of non-gender-specific language in advertisements for Equal Opportunity Employment/Affirmative Action positions, where the use of specific gender-exclusive pronouns was thought to exclude particular applicants.

Examples of linguistic intervention range from the written language of job applications, manuals, and textbooks to the oral conversations of the classroom. Educators concerned with challenging racist and sexist assumptions of traditional texts and practices have long been involved in attempts to engineer the language of their students. In particular, oral classroom discussion—thought to be limited to particular modes of interaction, as well as amenable particularly to males and majority students—

has been one site of attempts to articulate existing biases and to posit more egalitarian alternatives. The perceived inequities of classroom discussion have led to what might be characterized as a quest for a "linguistic utopia" of the networked classroom—the use of computer-mediated conversation (CMC) as a "space" in which limitations might be mitigated. Claims extolling the networked classroom as egalitarian utopia are many. Of the kinds of discussions made possible by CMC, it is the pseudonymous, synchronous conversation that most attracts those who would aspire to the project of changing linguistic behavior in the classroom. This study, then, will analyze the choreography of turn-taking and cohesion in classroom CMC as an attempt to assess its efficacy as a linguistic intervention.

The Discursive Interactions of the Traditional Classroom

Dissatisfaction with traditional classroom discourse has focused upon two distinct features: one, the limitations of interaction within such contexts, and second, perceived inequities in student participation. The participation available to students in large group discussions is by its nature limited in both the types of contributions and the amount of contributions. Teacher-led classroom discussion is thought to follow a strict choreography of turn-taking. Mehan (1979) describes a three-part sequence of initiation, reply, and evaluation as the dominant mode of interaction in classroom discourse. Citing studies from the United States, Britain, France, and Australia, Mehan finds classroom discourse to be tightly controlled, limited to a specific sequence in which the teacher initiates the topic, a selected student replies, and the teacher then evaluates the student's reply.

Such conversational interaction not only limits the number and lengths of contributions of student participants. In an ordinary interpersonal conversation, the floor is shared by participants who either select others or themselves at transition-relevance places, or TRPs, according to one of three rules:

1. *If the current speaker S selects the next speaker N in the current turn, S is expected to stop speaking, and N is expected to speak next.*
2. *If S's utterance or behavior does not select the next speaker, then any other participant may self-select. Whoever speaks first gets the floor.*
3. *If no speaker self-selects, S may continue.* (Sacks, Schegloff, & Jefferson, 1974)

This choreography of interaction allows for the conversation to proceed unobstructed by overlaps and silences. Traditional classroom discourse follows a more tightly constricted path. The teacher chooses the topic, selects a student speaker,¹ and reclaims the floor at the end of the student's turn, thus controlling the discourse and limiting any possible interaction between students. Students can neither select the next speaker nor claim the floor at will. Advocates of student-centered pedagogy, pointing out the artificiality, power relationships, and discursive limitations of such patterns, have called for reconceptualizing the linguistic roles of students and teachers in classrooms.

Some of the prevailing dissatisfaction with traditional classroom discourse may also be traced to perceived inequities in levels of student participation. Such perceptions may be largely the result of staffroom interchange, but some may also have been suggested by research in sociolinguistics. A number of studies since the mid-1970s have sought to characterize the linguistic behavior of men and women. For instance, men have been said to initiate more verbal acts than women (Aries, 1976, 1982), to take more turns and

longer turns (Eakins & Eakins, 1976; Spender, 1985), to interrupt females disproportionately (West & Zimmerman, 1983), and to withhold self-disclosure (Sattel, 1976) as well as response to topics initiated by women (Fishman, 1978). Women have been said to give more compliments (Wolfson, 1983), offer personal experience more often (Eakins & Eakins, 1976), to use a greater number of face-considerate "politeness" strategies (Brown & Levinson, 1978), to use more questions² (Eakins & Eakins, 1976; Wolfson, 1983), and to "hedge" more frequently than do men³ (Lakoff, 1975; Preisler, 1987). The results of many of these studies have been summarized and re-presented in best-selling books, yet it is worth noting that the studies themselves represent a widely divergent set of subjects and contexts. Indeed, few particular linguistic phenomena can be demonstrated to occur universally and without regard to local factors and motivations.⁴ Nonetheless, whether based on a cursory review of sociolinguistic findings or on subjective experience, educators express considerable dissatisfaction with traditional classroom discourse.

Despite the many problems inherent in generalizing about the sexes, the identification of certain features as "women's talk" and others as "men's talk" remains an assumption of educators interested in linguistic intervention. The perception is that conversational styles assigned by gender manifest themselves in the classroom as well. According to Tannen (1992), much classroom discourse—in particular, speakers taking the floor, arguing positions, demonstrating authority—is more congenial to the language experience of males than of females: *men try to take the floor, while women use strategies to avoid doing so. In a study of language differential in the adult classroom, Kelly (1991)*

found that males used language in their own interests: they dominated the talk, monopolized turn-taking, controlled topics, and silenced women. According to Smithson (1990), such linguistic inequities are indicative of a pattern of systematic bias in American educational systems. "Classroom talk," according to Swann and Graddol (1988), therefore "forms an important arena for the reproduction of gender inequalities in interactional power" (p. 64). As a result, many concerned educators wish to discover "why particular discursive strategies tend to dominate classroom talk and what might be done to alter such practices" (Alvermann & Commeyras, 1991, p. 1).

Computer-Mediated Communication as Linguistic Intervention

The limitations of classroom discussion—its controlled, limited choreography of turn-taking interaction and its perceived bias against women and minorities—have led to the project of seeking a more "egalitarian" mode of classroom discussion. The search might be characterized as a quest for what Pratt (1987) calls a "linguistic utopia," in this case that of the networked classroom, a space in which the limitations and biases of the traditional classroom discourse might be overcome or mitigated. Network technology offers students the opportunity to discuss subjects from their computer screens, typing their contributions on keyboards, sending them to the monitors of other participants, while simultaneously reading the contributions of others on their own monitors. The resulting discourse is neither wholly "text" nor "talk" in the definitions operationalized before the availability of this technology.⁵ For instance, some linguistic features, such as interruptions, are simply not made possible by the hardware and software. Many other

strategies and features of orality, meanwhile, are allowed. Wilkins (1991) calls this particular kind of CMC a "traditionally oral activity—interactive discourse—now in graphic form" (p. 57); however, its potential perpetuity⁶ suggests an activity that is simultaneously as extemporaneous as talk and as permanent as text.

As a technological mechanism for linguistic intervention, CMC would seem to facilitate a greater level of participation from the margins of a conversation. Graddol and Swann (1989) cite the case of computer conferencing at the United Kingdom's Open University as an example of a linguistic intervention that addressed (albeit unintentionally) gender imbalances and turn-taking rules.⁷ Graddol and Swann noted these features of conversation in this medium:

- no internal system of status hierarchies
- no external status cues
- no paralinguistic cues
- few options for ignoring comments
- no interruptions
- no ephemerality
- a "virtual" floor allowing space for metalinguistic critique.

The aggregate sum of these features seemed to offer promise, since conversants were unmarked by appearance or status (perceived or real), held responsible to critiques of linguistic behavior, and guaranteed unfettered access to the floor.⁸ As opposed to traditional classroom conversation, then, such a medium would seem to be less subject to arcane rules of turn-taking and to temporal and societal limitations.

As opposed to the asynchronous conferencing project at Open University, which functioned primarily as an adjunct to classroom discussion, it is the synchronous computer conference which has been proposed as a linguistic intervention, a replacement of

traditional large-group interaction.⁹ Flores (1990) describes the synchronous computer conference as facilitating a particular dynamic that is not possible within the confines of traditional oral interaction:

The computer conference facilitates changes in the classroom dynamics by modeling a more egalitarian mode of dialogue. Each student has equal access to the conference. Each student has an equal opportunity to introduce topics for discussion and to respond to topics. Each student can hold the floor as long as he or she chooses and cannot be interrupted. The lines of dialogue can fan out, weblike, from one student to many; between two students or a few; or round robin to all conference members, rather than just from student to teacher and vice versa. The forms of dialogue might vary from question and answer to topic and comment, to analysis, debate, reflection, and shared experience. (p. 112)

In these conferences, Flores argues, opportunities for discussion are greater than in traditional classrooms, which neither encourage nor allow open-ended discussion. "Network theory," as posited by Kemp and Barker (1990), builds upon computer conferencing to develop a theory of language education as a postmodern response to the current-traditional paradigm. Emphasizing the textual transactions between students, network theory sees knowledge as collaboratively constructed and managed in ways not possible within the traditional classroom and its controlled, limited dialogues.

Claims extolling the utopian virtues of the networked classroom are many. A few voices have pointed out its potential to serve as surveillance or to foster technological dependence (Zubhoff, 1991; Wresch, 1994). However, most of the chorus has embraced the possibilities of this forum. Not only has CMC been praised for its ability to facilitate

discussion that is "honest and informal," "value-negotiating," and "community-building" (Schriner & Rice, 1989, pp. 472, 477, 478); it has been lauded for its encouragement of the cooperative making of meaning (Kremers, 1990); and it has been cited for its ability to provide a fast, precise exchange of information (Kiesler, et. al., 1984). The feature that most attracts educators, however, is its potential for mitigating the inequities of classroom discourse. CMC has been posited to reduce differences of prestige (Martino, 1972), to be less subject to dominating forces (Kiesler, et. al.; Mabrito, 1992), and to be less bound by societal norms of consensus (Kiesler, et. al.). Furthermore, because it provides unlimited access to the floor and the ability to formulate responses without interruption, CMC has been posited to be likely to eliminate bias and encourage ideas (Cooper & Selfe, 1990), to liberate the silenced voices of minorities (Bellman, Tindibumona, & Arias, in press; Bump, 1990; Flores, 1990), and to mitigate limitations assigned by gender (Bump; Cooper & Selfe; Faigley, 1992; Kiesler, et. al.; Zubhoff).

Within the networked classroom, it is the pseudonymous, synchronous conversation that should be at least hypothetically, most egalitarian, most likely to overcome the limitations of oral classroom discourse. In such discussion, like in other exchanges, students see the messages of others scroll upwards on their monitor; they may participate by typing and sending a message of their own at any time. However, students offer their contributions under pseudonyms. Doing so further masks cues about gender and status, and, as a result, may encourage an even more egalitarian discourse in which no individual is compelled by the situation to perform in gender-assigned or status-assigned roles (Cooper & Selfe, 1990; Kiesler, et. al., 1984; Spitzer, 1989). To the

uninitiated, a transcript of pseudonymous, synchronous classroom CMC may appear fragmented and incoherent; it may appear to violate all known rules of speaker-selection at transition-relevance places; it may seem unbound by maxims of conversational implicature; it may even appear anarchic, purposeless, incendiary, and/or obtuse. Yet its proponents profess its value as linguistic intervention and suggest that its choreography of turn-taking and speaker-selection operates on different—and more egalitarian—principles than does its traditional oral counterpart.

Hypotheses

Advocates of CMC as linguistic intervention suggest that it offers an egalitarian discourse with students, not the teacher, conducting the choreography of discursive interactions. Based on the assumptions of CMC advocates, pseudonymous, synchronous classroom CMC could be expected to display these characteristics: distinct operations for nominating, selecting, pursuing, and concluding topics; participants uninhibited by the constraints of traditional turn-taking rules; and cohesion developed and maintained by participants in their interactions. Furthermore, it could be expected that students conduct the bulk of the choreographing of these interactions.

Subjects

The particular example of pseudonymous, synchronous classroom conversation under study here was chosen for a number of reasons, although it can be, neither no more nor no less than any other, considered "representative." The discussion was chosen as it

involved an entire class for a sustained period; it offered a balance of male and female participants from a range of ethnic and social backgrounds; it involved the professor as an anonymous participant; and it was one of many such conversations in the course (its participants therefore being familiar enough with both the technology and the interaction to make contributions with relative ease).¹⁰

The conversation is from a 100-level literature course taught by an adjunct lecturer at a mid-Eastern state university.¹¹ The course was called "Intersections: The Anglo-American and the African-American Traditions" and centered around issues of race in history and letters. Students read books in pairs that shared themes but emanated from contrasting cultural heritages: in this conversation, students were discussing Charles Johnson's *Middle Passage*, which they were to read in tandem with Melville's *Benito Cereno*.

According to the instructor, "the class was approximately half black (Caribbean and African-American) and two-fifths white, with the remaining few students either Latino or Asian. The class was 55 percent male, 45 percent female." The instructor participated in the discussion by posing three text-based questions to prompt conversation, then, assuming a pseudonym, taking his place as a participant among the students until "revealing" his identity near the discussion's end. Students were prompted to address the significance of a particular textual feature and to discuss the relevance of the text's claims about "violent revolution" for Americans in 1994.

Methods

The analysis surveys a message-by-message transcript of pseudonymous, synchronous classroom CMC using the program "Daedalus Interchange." The linguistic properties of each message sent were analyzed for their pragmatic function. Cohesion in a written text is known as the use of devices such as pronominalization, ellipsis, and conjunction for creating links between clauses and sentences (Halliday & Hasan, 1976). The text under discussion, however, a transcript of classroom CMC, falls neatly neither under the domain of speech nor that of writing. Generally, however, cohesive devices are those which function to develop and maintain ties across larger levels of discourse. In computer-mediated conversation, specific linguistic links from one post to a previous post establish cohesion.

Messages posted in such conversation, then, can function either to develop cohesive ties to other messages, or they can function to initiate new topics or critique the discussion as a whole. Cohesive links were identified as the *anaphoric reference* to a theme in a previous message (including nominalization, pronominalization, and paraphrase)¹²; as an *adjacency pair* response to a previous message (such pairs including, but not limited to, question/answer, greeting/greeting, accusation/apology)¹³; or as a *direct address* to the sender of a previous message (the explicit evoking of the pseudonym of another participant). It should be noted that these functions are distinct, but that messages may exhibit pragmatic multifunctionality: that is to say, the use of one strategy in a message does not preclude the use of other strategies. Any message which did not feature any of these strategies was categorized either as a *bid for a new topic* of

discussion, a *metalinguistic critique* of the discussion as a whole, or as an *off-topic interjection*.

Further analysis included the diagramming of any coherence maintained by participants' use of these methods, as well as the study of particular posts that seemed either to engender considerable further discussion or to conclude existing threads of discussion. Finally, in order to discern the degree to which the discussion was teacher- or student-driven, the instructor's posts were isolated from those of the students and assessed for their role in directing the choreography of topic and speaker selection.

Results

The results suggest that pseudonymous, synchronous classroom CMC indeed displays the hypothesized characteristics: in the conversation under discussion, there exists evidence of distinct operations for speaker-selection and turn-taking; of distinct operations for nomination, selection, and pursuit of topics; and of coherence developed through the repeated use of cohesive devices. Furthermore, the bulk of these operations were conducted by student participants. Rather than depending on complicated avenues of plan deduction, the participants instead made use of specific cohesive linguistic links between their messages and those previously posted.

The participants (nine male students, seven female students, and the instructor) contributed a total of 118 messages in a period of about 40 minutes. Individual students contributed anywhere from one message to 12 messages, the instructor 15; lengths of messages ranged from four to 61 words. Six messages were bids for new topics, and

three were metalinguistic critiques; no post was considered an off-topic interjection. All of the remaining 109 messages (92.4%) used one or more cohesive devices. Of those, 92 messages (78%) offered a degree of anaphoric reference; another 29 messages (24.6%) functioned as the conclusion to an adjacency pair (usually question/answer, but occasionally others, such as accusation/apology); another 54 messages (45.8%) offered direct address to the sender of a previous message as well (see Table 1). Sixty-one messages (51.7%) demonstrated the simultaneous use of multiple cohesive devices (see Table 2).

Table 1: Pragmatic Function of Messages

pragmatic function of message	number of messages	percent of messages
cohesive ties (total)	109	92.4%
<i>anaphoric reference</i>	92	78.0%
<i>adjacency pair conclusion</i>	29	24.6%
<i>direct address</i>	54	45.8%
bid for new topic	6	5.1%
metalinguistic critique	3	2.5%
off-topic interjection	0	0%

Table 2: Messages Using Cohesive Ties

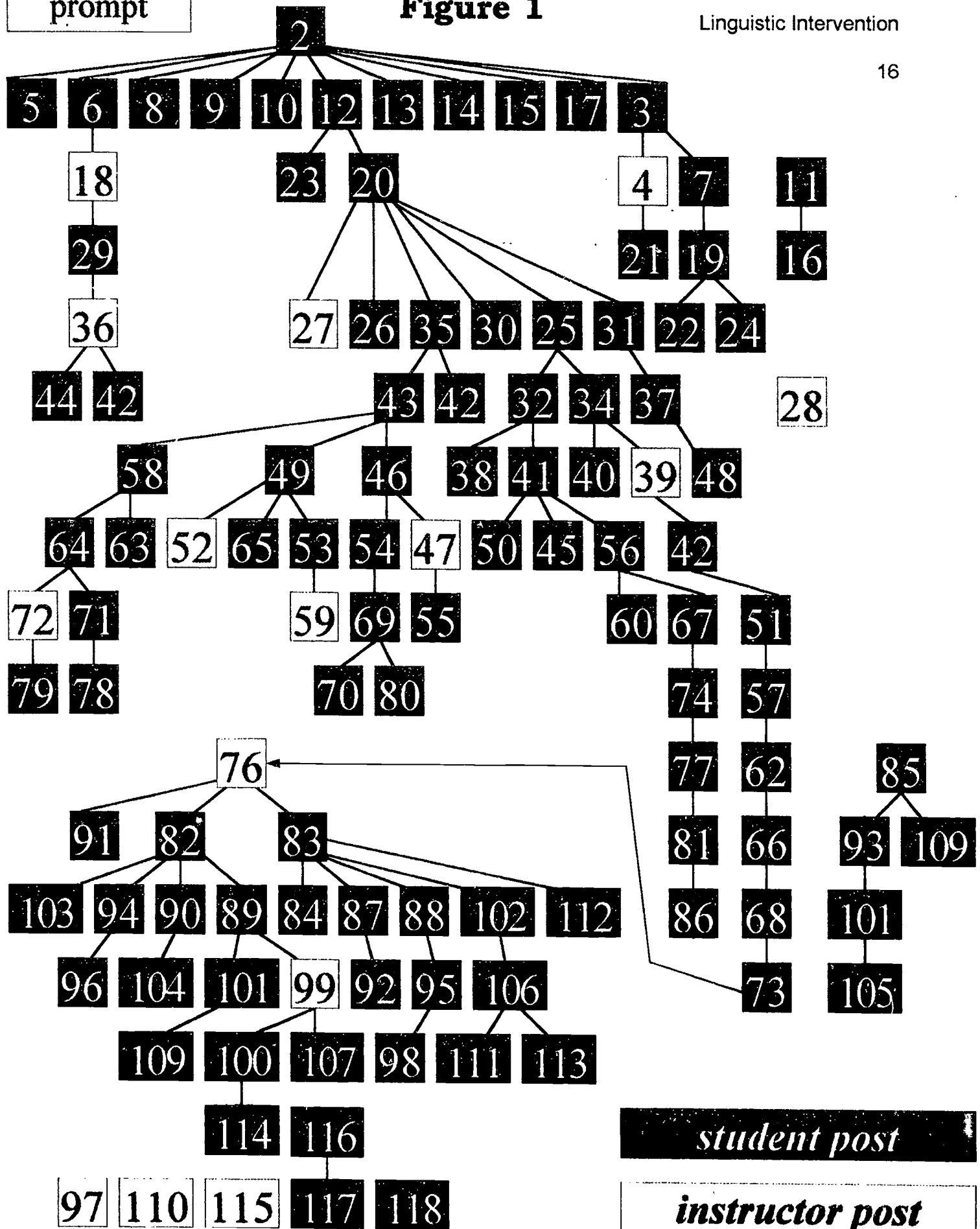
use of cohesive tie	number	percent
anaphoric reference ONLY	36	30.5%
adjacency pair conclusion ONLY	0	0%
direct address ONLY	12	10.2%
anaphoric reference AND adjacency pair conclusion	18	15.6%
adjacency pair conclusion AND direct address	4	3.4%
direct address AND anaphoric reference	32	27.1%
anaphoric reference AND adjacency pair conclusion AND direct address	7	5.9%

prompt

Figure 1

Linguistic Intervention

16



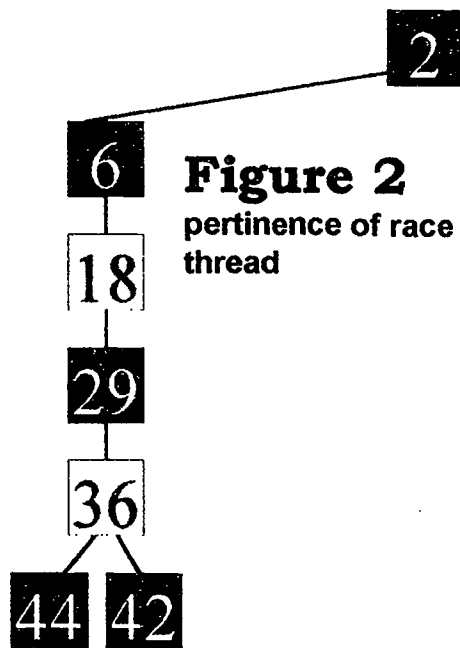


Figure 3
oppression as
justification thread

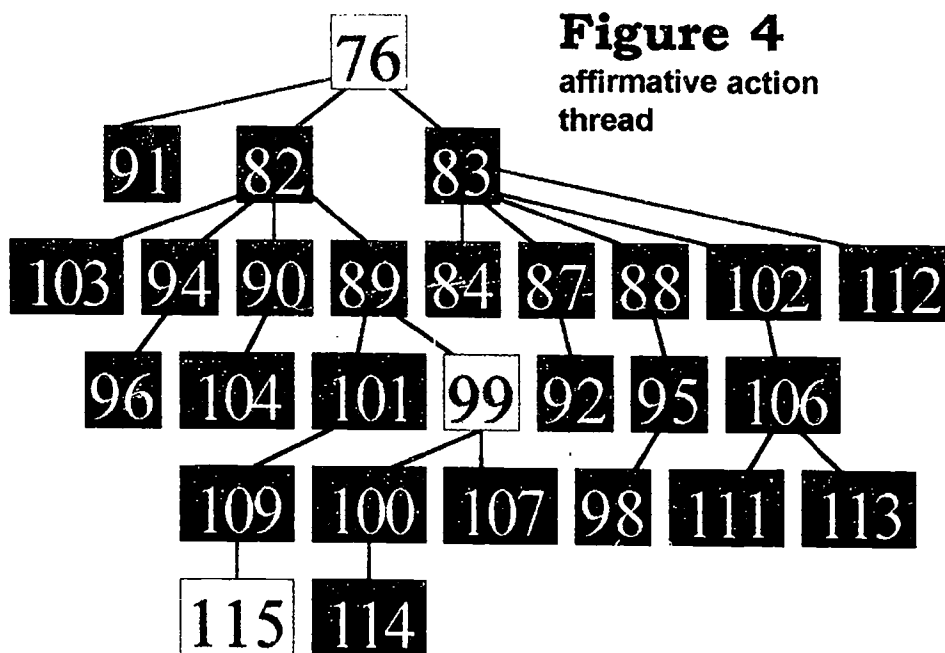
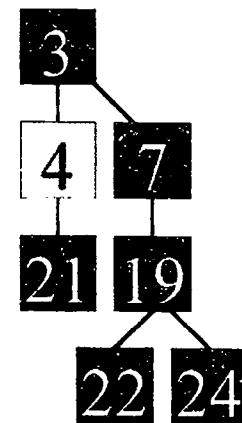
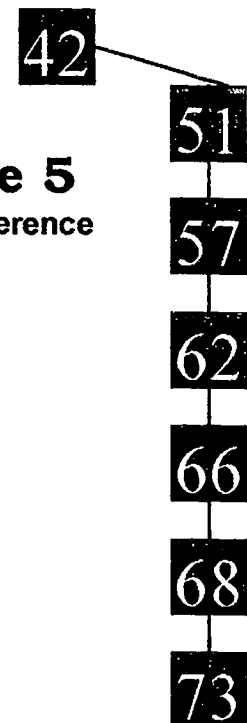


Figure 5
racial difference
thread



student post

instructor post

The repeated and consistent use of these devices creates a chain of cohesion in which nearly every message responds specifically to a previously posted message. Figure 1 presents a graphic representation of this chain of cohesion, depicting each message and its "descendants," or subsequent messages using a cohesive device to respond to the prior message. (The cohesive linguistic links are represented by lines connecting each message downward to following messages.¹⁴) The "lineage" of message 114, for example, can be traced as a response to message 100, which was a response to 99, which was a response to 89, which was a response to 82, and so forth, all the way back to the bid for a new topic in message 2.

This graphic representation also demonstrates the size and clustering of particular threads of discussion. For instance, one thread (see Figure 2) took up the subtopic of the pertinence of race/color to the issue under discussion; another (see Figure 3) the subtopic of oppression as a possible justification for violence; another (see Figure 4) the subtopic of "reverse racism"; and still another (see Figure 5) the recognition and problems of racial difference. In Figure 1, as in all figures, the instructor's posts are shaded differently than the students'; new topic bids, as well as metalinguistic critiques and off-topic interjections, are unconnected to previous messages.

Analysis

To the uninitiated, a cursory glance at the transcript of this conversation would demonstrate an apparently fragmented, non-linear chaos of voices, an incoherent pastiche. To those more familiar with the choreography of traditional classroom

discussion, its lack of teacher direction or control, its peculiar methods for selecting speakers and turn-taking at places other than those considered "transition-relevant," its lack of any interruptions—all represent a decidedly different conversational pattern. The following sequence of posts, for instance, seemingly displays little evidence of cohesion¹⁵:

10 charles johnson: *the slaves had no option, but the violent option didn't work.*

11 mo: *Does anyone feel that Falcon and Calhoun had some comparisons such as womanizers and running from the law and different creditors.*

12 Melody: *Conference one was in a heated debate as to whether violence is the answer to all of today's social ills. The consensus seemed to be that peaceful negotiation tactics, and non-violent, peaceful protest go a lot farther to finding resolution.*

13 jay: *the Almuseri were on a boat, they were property. Nothing else would have resulted in a better situation.*

14 blue: *In 1994 a violent revolution only leads to suffering, deaths, and a worse condition than before the revolt . All this has to occur before anything good can come out of it. Look at the situation in Haiti.*

Yet a closer analysis of the operations of message-posting and the consistent use of cohesive devices—anaphoric reference, adjacency pair conclusion, and direct address—demonstrates that the participants freely nominated and pursued subtopics and, furthermore, created cohesion despite the conversation's apparent fragmentation. Furthermore, as hypothesized, the bulk of this choreography was indeed directed by students, rather than by the instructor.

Among these cohesive devices, ***anaphoric reference*** represents the attempt to maintain coherence through the strategies of nominalization, pronominalization, and/or paraphrase. Seventy-eight percent of the messages in the conversation used this

strategy to some degree, linking each response to a previous response through anaphora, as in the following nominalization of a subtopic:

58 charles johnson: *you want war- do you even know what war is like. you don't accomplish anything, but destroy and have to rebuild. just look at the riots. they destroyed their own property and towns, and people only look down at that area and compare them to "animals" what did that prove or gain?*

63 nameless: *the riots, for many of the rioters, was merely a way to get free tvs and stereos or to find something fun to do.*

In this exchange, as in the example following, the reiteration of the subtopic linked the post directly to a previous utterance, thus creating cohesion.

31 long john silver: *to crazyhorse, the women rights movement was successful .*

37 jane: *Maybe you should re-consider the women rights movement again. I don't think that has ended entirely.*

In other cases, cohesion is maintained through paraphrastic reference:

11 mo: *Does anyone feel that Falcon and Calhoun had some comparisons such as womanizers and running from the law and different creditors.*

16 charles johnson: *mo: does that show that beyond color we are all alike and experience the same things?*

A second strategy for developing cohesion is the use of **adjacency pairs**. The use of this strategy does not preclude anaphoric reference but can merely create an additional layer of coherence. Most uses of adjacency pairs in this conversation involved answers to a posed question; indeed, message 2, a student post asking if there exists any option to violence for the Almuserrie, prompted a series of answers (in messages 5, 6, 8, 9, 10, 12, 13, 14, 15, and 17), and message 20, a request for examples of successful peaceful demonstration, initiated a series of such (in messages 25, 26, 27, 30, 31, and 35). The following exchange demonstrates a single question/answer adjacency pair.

4 uganda: *what does justification mean/entail?*

21 America: *I believe justificatoin is a level of agreement with an action. The slave rebellion was justified. The Republic I think might have a symbolic meaning. A republic is a representative government. This did not exist on the boat.*

Such are not the only types of adjacency pairs that can create cohesion, however. In the example below, a participant accused of ignorance about a subtopic acknowledged that his or her knowledge is indeed limited, explained the comment, and apologized.

90 mo: *Charles Johnson: In my opinion, you know nothing about the Watts Riots, I think before you speak, you should do some research.*

104 charles johnson: *I do not know much about the watts riots and i will admit that , but i was basing my comment on what the person said about them and i'm sorry if i missed the point.*

Participants also created cohesion and pursued subtopics in the **direct address** of other participants. In the conversation under study, students and professor used direct address as a means of cross-examination, accusation (see message 90 above), clarification, exemplification, contradiction, and agreement. The use of direct address often included, rather than precluded, the strategies of anaphoric reference and adjacency pairs, as the following example demonstrates.

25 Melody: *Ghandi changed things. Martin Luther King changed things.*

32 crazyhorse: *To answer Melody. India is still a thrid world deprived country that is struggling as bad as it was before Gandi. King helped the situation but, blacks and other minorities are still kept down.*

In some cases, the use of direct address allowed a dyad to develop within the context of a larger conversation, participants establishing a thread of conversation between (and of interest to) themselves. In this example, the students "blue" and "long john silver" carried on a discussion about the efficacy of violence in achieving social change.

46 blue: *In today's society, peaceful means don't pacify everyone. Thats why violent revolutions occur.*

54 long john silver: to blue: *but violence only causes new violence.*

69 blue: *To long john silver, I know it causes new violence but societies just don't understand that.*

80 long john silver: to blue: *If you committed a crime, why would anyone let you get away with it. They would only hate you more and go against your view even more.*

The cumulative effect of these strategies of anaphoric reference, adjacency pairs, and direct address is to create cohesion even in a conversation that on its surface appears fragmented, incoherent, and chaotic.

Not only do these strategies enable students to conduct the choreography of turn-taking and speaker selection in a coherent fashion; these strategies also allow participants to develop and maintain subtopics in different threads of the conversation. For instance, a student ("America") and the instructor ("uganda") debated the relevance of race to the topic under discussion.

6 America: *Why does everything have to do with racial society. Can't we discuss our society without the discussion of race.*

18 uganda: *america, this class is specifically ABOUT race.*

29 America: *uganda: the class is about race not the world. we can discuss life without color. we can be color-blind*

36 uganda: *not if you are told that YOUR race were "wrong", america. a white person in the usa can sometimes ignore their whiteness, but its an illusion. racelessness just is not possible.*

42 America: *Uganda: I don't say you particular but culture and society itself is too race oriented and not colr blind.*

It is worth noting that in the above exchange, the professor was posing as another student, and it is the student who "got the last word," so to speak. These two participants were conducting this debate, in essence, by themselves. Unlike a traditional large-group discussion in which only one participant can take the floor at a time, the computer forum

allows this debate to develop while other threads continue. Here, the importance of race can be debated between two interested parties without their dominating, interrupting, or excluding the discussion of other conversants. Furthermore, participants can successfully navigate between simultaneously developing threads—as did one student, “America,” who in messages 73 and 77 participated in separate threads on the recognition and problems of racial difference and on the advances of the civil rights leaders, respectively.

In pseudonymous, synchronous classroom CMC the introduction of and bidding for new topics is motivated only, apparently, by participant interest. Since no paralinguistic phenomena, other than the mechanics of typing and the conditions of the hardware/software in use, affect the delivery and content of messages, one can assume that threads of discussion are developed primarily for one reason: that students find them worthy of further response. In the conversation under study, messages which prompted interest—whether the interest was semantic, forensic, or supportive—were followed by threads of subsequent messages responding directly. Since no means other than linguistic ones could be used to contribute to (or dominate, or withdraw from) the conversation, only the number and type of replies a particular message generates can indicate its level of interest for other participants. Any post thought not to be of further interest to any in the group was simply not acted upon, and the participants pursued other threads of discussion.

The professor's role in this discussion displays mixed characteristics. Superficially, given the fact that the professor posted more messages than any student, and given his having prompted and shut down the discussion with messages at the beginning and near

the end of the conversation, one might presume a dominant role on his behalf. Yet closer analysis belies such presumption. Figure 1 contrasts the instructor's posts with those of the students. In the initial moments of the discussion, participants were bidding for new topics (messages 2 and 11) and responding to those bids, rather than responding directly to the instructor's prompt. Furthermore, not all of the professor's comments were responded to: some of his posts (messages 27, 52, and 59, for example), prompted no further response from other participants; rather, students chose instead to pursue topics in the posts of other students. And finally, the professor's comments were neither no more nor no less likely to engender further discussion. One message (76) by the instructor prompted a sequence of responses on the issue of affirmative action and "reverse racism," yet those threads were matched, for example, by those of students (for example, messages 2, 3, 20, and 25) which also initiated considerable further discussion. The professor's role—partly due to his anonymity and partly due to the pragmatics of the conversation—was not dominant in selecting topics or speakers; rather, it was largely the student participants who successfully nominated topics for discussion in the individual threads.

Limitations

There exist limitations to the design of the study. To begin, it presents an analysis of the pragmatic functions of messages in only one discussion, one which cannot be presumed to be representative of pseudonymous, synchronous CMC as a whole. Only further investigation of similar data could validate the reliability of the preceding analysis.

The "observer's paradox" of Labov's (1972) quantitative paradigm is mitigated somewhat by the students' familiarity and ease with the medium as well as by the medium itself since the software always offers the possibility of saving—or, in sociolinguistic parlance, "recording"—the discussion, and, furthermore, purely ethnographic methods for observing such conversation are impossible under the conditions of anonymity. The use of the individual post as the standard unit of measurement might not be replicable with data in which participants post longer, more multifunctional messages. And the study neither undertakes nor implies global coherence as resulting from local cohesion. Finally, although a review of the literature merits such an analysis, the current study does not undertake a gender analysis of the postings.

Discussion

As an attempt at linguistic intervention, the use of pseudonymous, synchronous classroom CMC would seem to demonstrate some promise. The example at hand suggests that students were indeed capable of choreographing the discussion to suit their own needs, rather than those of the teacher. Student participants appear to have been free to nominate, select, and pursue topics unfettered by the spatio-temporal limitations of the "floor," and discussion threads were developed by dyads, triads, and other configurations as participants deemed desirable. Furthermore, the students made consistent, repeated use of linguistic ties to previous comments, strategies which worked to develop and maintain cohesion. And finally, the teacher's role seemed reduced: he

neither choreographed, dictated, nor selected, but merely participated in a conversation conducted primarily by students.

It is worth noting, though, that CMC technology changes only a few aspects of conversation. First, it creates a hybrid form of discourse. Second, it reconceptualizes the floor. And third, it offers anonymity. The first of these changes may have the longest-term implications. The transcript under study reflects many characteristics of orality; other transcripts I have studied range from the "very oral" (spontaneous, interactive, unedited) to the "neatly written" (controlled, isolated, edited). Students are learning to "talk" with their typing, and the approaching likelihood of voice-recognition software may well further diminish the once-clear distinction between speech and writing.

The second of these changes, the reconceptualization of the floor, has the most clearly delineated sociolinguistic implications. As linguistic intervention, the introduction of synchronous CMC clearly changes the interaction of students engaged in conversation, making possible most of the phenomena indicated above. The limitations inscribed by the spatio-temporal fixedness of the floor, in tandem with the clearly defined rules for turn-taking, clearly restricts the number of students who can participate, the length of their participation, and the types of their participation. Without these limitations, an entirely different choreography of discursive interaction is made possible.

The third change, the condition of anonymity, is often heralded as the change which might allow for a more egalitarian discourse than traditional classroom discussion is thought to offer. In the Middle Passage conversation, the use of pseudonyms allows students to ignore existing societal conditioning and focus their responses on the text of

others' messages. Whether or not the fact that students are allowed to do so suggests a successful intervention is less easy to conclude. It would be shortsighted to assume that social inscriptions disappear with the condition of anonymity and the absence of paralinguistic phenomena, yet, as linguistic intervention, this particular forum indeed made possible the foregrounding of the *text* (of participant exchanges) at the expense of the *context* (of participant status and interrelationships).

Many features of that context, however, of the classroom itself, are nonetheless readily apparent in the transcript of the discussion under study. With a number of messages serving to assert perceived truths, cross-examine other participants, rebut claims, demand evidence, and, occasionally, to accuse others of ignorance, idealism, and incoherence, the discussion can be characterized as authoritative and adversarial—a characteristic, the professor says, of the class itself, which, given its ethnic diversity and reading list, was prone to disagreement and dissensus. The participants included the presidents of the student union and of the Black and Latino student associations, and the class, in the instructor's words, was a "powderkeg" (Salvo, 1995). While other CMC transcripts I have studied appear more attenuated and supportive, and others more textual and formal, the authoritative, adversarial nature of this conversation is likely conditioned by a variety of contextual factors: the nature of the course, the nature of the topic and the questions, the nature of the professor, and the nature of the participants.

Other conflicts—in particular, the question of gender—are less apparent in the Middle Passage discussion, but no less an impetus for the linguistic intervention of pseudonymous, synchronous classroom CMC. While this study does not attempt to

address whether any socially-assigned gender inscriptions are mitigated by the electronic forum, the technology is nonetheless often posited, as the literature review points out, as having the potential to accomplish exactly that. An interesting question for study is posed by such claims. I suspect that it may have been too much for the futurologist educators to have expected new communications technologies to mitigate conflicts that humans have so far found unable to surmount, as some recent inquiries into the workings of gender in computer domains suggest. Herring (1994) finds that gendered conversational styles are evident in authored contributions to BITNET discussion lists; Tannen (1994) argues that male voices tend to dominate e-mail discussions; Kaplan and Farrell (1994) report that women make up anywhere from only ten percent to 30 percent of the subscriber base to commercial services like Prodigy™ and CompuServe™; and We (1993) finds "relatively few women" participants in newsgroup discussions, even among the feminist newsgroups. Furthermore, the world of CMC is prone, unfortunately, to the same kinds of gender conflicts witnessed elsewhere. Truong et. al. (1994) report instances of antisocial behavior directed towards women, including harassment (also reported in Bruckman, 1993; Kantrowitz, 1994), obscenity, and libel, and, in virtual-reality multi-user domains, problems of theft, vandalism, rape, and male violence (also reported in Cherney, 1994).

Recent research has focused its study on the culture of computer users, rather than on their linguistic behaviors. Citing the combative discourse of computer-program language (programs may "fail" or be "aborted" or "killed"), Turkle and Papert (1990) argue that computer culture is unfriendly to epistemological pluralism, and that the ethical codes of some women are ill fit to the culture of computers. Selfe and Selfe (1994) offer a

convincing argument for what they call "the semiotics of capitalist culture" in the discourse of computer icons and file maintenance, a culture that is, again, eminently patriarchal. Given such obstacles, it seems remarkable that it has largely been women who have played founding roles in the early development of writing instruction software and in the development of professional journals on computers and composition. Kaplan and Farrell (1994) suggest that researchers should now begin to address the persistence of these women who work against the prevailing conditions of patriarchy and capitalism in computer-mediated communication and culture; further studies could perhaps attempt to assess the degree to which gender plays a role in classroom CMC.

A final question to be raised in any discussion of linguistic intervention concerns not merely the efficacy of the intervention itself, but of the social changes it is thought to facilitate. As an intervention, replacing traditional classroom discourse with synchronous CMC can be a costly venture; it could also suggest to students that only under the conditions of the electronic forum can they participate unencumbered by the limitations of the floor and status. Some might argue that a better intervention would be to invest greater efforts in teaching students to conduct interpersonal, oral conversation amongst themselves in ways that would foreground the text of their utterances and minimize whatever assignments of race or sex might limit participation. Others might argue instead that the increasing computerization of communication systems, combined with the growing dependence on technology in all aspects of life, suggests the need for greater practice and familiarity with the kinds of linguistic interactions conducted in such a medium. It is worth asking of those who cite the failures of traditional classroom discussion as grounds

for the linguistic intervention of CMC: if an intervention is desirable, what makes this particular intervention the most desirable of all possible interventions?

According to Graddol and Swann (1989), compared to the larger ideological struggles that frame sociolinguistic concerns, any linguistic intervention—whether the replacement of gendered pronouns with generic ones or the inculcation of CMC in a college classroom—can seem a trivial concern. It is as difficult, perhaps even more so, to measure the effect of linguistic intervention as it is to measure the effects of current linguistic practice. Yet it is worth remembering that change typically occurs in the opposite direction: it is the environment that motivates linguistic change, not the other way around. Therefore it would be presumptuous to assume that effective change at the linguistic level is any indication of effective change on a societal level. Tacit in an intervention effort appears the assumption that language creates, rather than reflects, social inequality. It may be true, then, that a technological innovation will have little value outside its own educational impact. The use of pseudonymous, synchronous CMC in the classroom is a case where deliberate intervention is premised on some assumptions (those about “women’s language”) that are decontextualized and questionable and others (those about classroom discourse, turn-taking, and the floor) that are more empirically demonstrable. The intervention is designed to promote equality of opportunity and treatment; its motivation is in some ways overtly feminist, and in most ways pro-student. Still, this particular attempt at linguistic intervention, like most others, is occurring within a context of social change, and as such, is neither prerequisite to, nor sufficient for, the concomitant social change to which many of its advocates aspire.

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Notes

¹ As Green (1989) points out, the teacher may, in order to impose rigid control, order the vocative first: "Del, tell us why the author assigns such importance to peaceful demonstration."

² The issue of questions is under debate in the sociolinguistic community: among others, Fishman (1980) reports more use of questions by women; however, Harris (1984), in her study of the language of the courts, finds that questions may be more likely to be used by participants with greater power.

³ Holmes (1984; 1987) distinguishes more carefully between the functions served by hedges which may be used to express confidence in some instances and uncertainty in others. Her findings challenge Lakoff's assumption that women use more hedges than men. Furthermore, Holmes and other researchers, among them Spender (1980) and Smith (1985), have pointed out that Lakoff's claims were largely dependent on intuition and observation and further perpetuated an understanding of women's language as "powerless."

⁴ There are other difficulties embedded in making any such generalizations about women and men. The term "gender" itself, as Butler (1990) points out, cannot separate itself from a web of temporary, contradictory intersections of political and cultural forces and therefore may be too complex to be reduced to a biological binary. Coates (1993) argues that female language may be associated with "powerlessness" rather than sex, and it can be difficult to escape the androcentric notion that any linguistic form found to be associated with women's talk is therefore indicative of powerlessness. Some sociolinguistic research that has focused on sex differences has proceeded from an assumption that males view power as the potential to dominate or control; yet a feminist definition of power as energy, interaction, and the empowerment of others may contrast significantly with this assumption.

⁵ Given the increasing use of computer-mediated conversation and electronic text-publishing, some researchers have called for a reconsideration of the notions of "spoken" and "written" language. Halliday (1978) suggests the notions of "spontaneous" versus "self-monitored" language. Biber (1986) suggests that such text can be either "interactive" or "edited." However, any such representation of discourse must probably take into consideration the purposes, modes, networks, and relationships of the participants.

⁶ Previous comments may be consulted in mid-conversation, and transcripts may be printed out at the conclusion.

⁷ I do not mean to presuppose intentionality on the part of those who would offer CMC as linguistic intervention to mitigate the limitations of traditional classroom discourse. In the Open University case, such features of CMC were discovered *de facto*; I assume that in most cases, such is the case, and the virtues of CMC were touted for their sociolinguistic potential. As one of my professors, citing the popularity of Minoxidil as a treatment for male-pattern baldness, pointed out, "It's a bit like finding out that your high-blood-pressure medicine grows hair."

⁸ Access is unfettered, that is, by the limitations of the floor itself, although limitations of time, cost, and technological efficiency, as well as of manual dexterity, continue to exist.

⁹ Asynchronous conferencing, in which participants log on to the network at an unspecified time and record and read messages at their own pace, may be considered an adjunct to classroom discussion; synchronous conferencing, which requires the presence of conferees at a specific time (and, often on local-area networks, a specified place as well), may be considered a replacement for traditional classroom discussion.

¹⁰ Some educators who have worked with synchronous CMC describe the difficulties encountered by novices as an indication of the medium's novelty; transcripts I have studied of first-time users often display considerable evidence of off-topic interjections, including personal messages, expressions of difficulty using the hardware and software, and, sometimes, sophomoric displays of exuberance (this last especially in pseudonymous conversations).

¹¹ The author wishes to acknowledge the courteous assistance of Michael J. Salvo of the State University of New York—Binghamton and his English 120L students for their contributions to this study.

¹² Green (1989) defines anaphora as "reference to an entity referred to in preceding discourse" (p. 26).

¹³ The concept of adjacency pairs as cohesive device in discourse is developed in, among other places, Schegloff (1979), Winter (1977, 1978), and Hoey (1983).

¹⁴ Two of the 118 messages (posts numbers 42 and 101) each contain two separate direct addresses of other participants, and thus each is represented twice in Figure 1.

¹⁵ In this and in the following reproductions of exchanges, student pseudonyms are presented exactly as they were entered by the participants. "charles johnson"—the name of the author of *Middle Passage*—was taken as a pseudonym by one student; others used country-names, place-names, first names, and nicknames. The availability and use of pseudonyms does not necessarily shroud identity, racial or otherwise, as message 51 (Robby: "Don't tell me you don't see me as being black") will attest. The utterances are transcribed exactly as they were entered by each student at the keyboard, with underlining used to indicate evidence of the particular strategy under discussion.